
REMARKS

Claims 1-3, 5-24 and 26-29 are pending herein.

By this Amendment, claims 1, 3, 23, 24 and 27 are amended, claims 4 and 25 are canceled, and claims 28 and 29 are added. Claims 1, 3, 23 and 24 have been amended to more fully distinguish the invention of the claims over the teachings of the prior art references cited against these claims. Claim 27 has been amended to correct a typographical error.

No new matter is added by this Amendment. Support for the language added to the claims is found in the original specification, claims and Figures. In particular, support for the language added to claims 1, 23 and 24 is found at, for example, Fig. 2 and paragraph [0056] of the specification. Support for the language added to claim 3 is found in original claim 4 and at, for example, Fig. 1.

I. Information Disclosure Statement

Applicant notes that the Form PTO-1449 from the Information Disclosure Statement filed on July 19, 2002 has not been returned with the Examiner's acknowledgement of having considered the references cited therein. Applicant respectfully requests the Examiner to acknowledge the references as having been considered. As a courtesy to the Examiner, Applicant herein attaches a copy of the Form PTO-1449 from the Information Disclosure Statement filed on July 19, 2002 and respectfully requests the Examiner to initial each cited reference as having been considered.

II. Drawings

The Patent Office has forwarded a Notice of Draftperson's Patent Drawing Review indicating that the lines, numbers and letters of Figs. 1-9 are not uniformly thick, well defined, clean, durable, and black (poor line quality). To this end, Applicant submits herein replacement sheets for each of Figs. 1-9. Applicant submits the Figures meet the requirements of the Patent Office.

III. Allowable Subject Matter

Claims 4, 8 and 9 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Original claim 4 depended from claim 3. Applicant herein incorporates the allowable subject matter of claim 4 into claim 3. Thus, Applicant submits that independent claim 3 is allowable.

IV. Rejections Under 35 U.S.C. §112

A. Rejection Under 35 U.S.C. §112, First Paragraph

Claims 1 and 3 were rejected under 35 U.S.C. §112, first paragraph, for allegedly failing to comply with the enablement requirement.

Claim 3 is amended herein to include the allowable subject matter of claim 4. Thus, as acknowledged by the Patent Office, claim 3 is now allowable.

Claim 1 has been amended to include an electro-optical device comprising a plurality of signal lines and a plurality of pixels, each pixel including an electroluminescence element and a liquid crystal element, wherein light emission of the electroluminescence element and light reflection through the liquid crystal element is controlled according to a signal supplied through the plurality of signal lines.

Applicant submits that amended claim 1 meets the requirements of 35 U.S.C. §112, first paragraph. Reconsideration and withdrawal of this rejection are thus respectfully requested.

B. Rejection Under 35 U.S.C. §112, Second Paragraph

Claims 23 and 25 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Specifically, the Patent Office stated that (1) one cannot tell what physical quantity is being referred to in the claims, (2) that the claims cannot tell how to set a usage

condition, and (3) claims 23 and 25 have the same limitations and are thus redundant. This rejection is respectfully traversed.

Applicant herein amends claim 23 and cancels claim 25. Further, Applicant submits that (1) the physical quantity referred to in the claims is defined in the specification at least at paragraph [0034]; (2) how to set the usage condition referred to in the claims is defined in the specification at least at paragraph [0035] such that the specification enables one of ordinary skill in the art to practice the invention of claim 23 without undue experimentation; and (3) Applicant herein cancels claim 25, thus the allegation that claims 23 and 25 have the same limitations and are redundant is now moot.

Nonetheless, claim 23 no longer recites setting a usage condition of the plurality of types of electro-optical elements on the basis of a result obtained by measuring a predetermined physical quantity. Thus, this rejection is now also moot.

Applicant submits that the claims are clear and definite in accordance with the requirements of 35 U.S.C. §112, first and second paragraphs.

For the foregoing reasons, Applicant submits that the rejections under 35 U.S.C. §112 have been overcome. Reconsideration and withdrawal of these rejections are thus respectfully requested.

V. Claim Rejections Under 35 U.S.C. §102(e)

Claims 1-2, 10 and 17 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,025,894 (hereinafter "Shirasaki"). Claim 3 was rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent No. 6,556,260 (hereinafter "Itou"). Claims 23 and 25 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,133,976 (hereinafter "Kimura"). These rejections are respectfully traversed.

Claim 3, as discussed above, is amended to include allowable subject matter. Thus, this rejection, with respect to claim 3 is now moot.

Claim 1 recites an electro-optical device comprising a plurality of signal lines and a plurality of pixels, each pixel including an electroluminescence element and a liquid crystal element, wherein light emission of the electroluminescence element and light reflection through the liquid crystal element is controlled according to a signal supplied through the plurality of signal lines.

Claim 23 recites a method for driving an electro-optical device, the electro-optical device including a plurality of pixels, each pixel comprising an electro-luminescence element and a liquid crystal element, and the method comprising the step of selectively driving the electro-luminescence element and liquid crystal element for displaying images.

Shirasaki discloses that electroluminescence is used as back light (See the Abstract of Shirasaki). Itou discloses that electroluminescence is used as front light (See the Abstract and Fig. 1 of Itou). Kimura discloses an electroluminescence element capable of emitting light with an electric field utilized for light modulation (See col. 20, line 46 to col. 21, line 14).

The cited references that include electroluminescence and liquid crystal teach using electroluminescence as a light source, not as a display element of a pixel.

Claim 1 is structured such that the characteristic of performing a pixel display either by electroluminescence or by a liquid crystal element is expressed as "controlled according to a signal supplied through the plurality of signal lines" (see also paragraph [0056] of the specification). This limitation is nowhere taught or suggested by the cited references.

Further, each of claims 1 and 23 recite "each pixel comprising an electro-luminescence element and a liquid crystal element" and this is also nowhere taught or suggested by the cited references.

Thus, amended claims 1 and 23, and claims 2, 10 and 17 depending from claim 1, are allowable and these rejections are now moot.

For the foregoing reasons, Applicant respectfully submits that Shirasaki, Itou and Kimura each fail to anticipate the subject matter of claims 1-3, 10, 17 and 23. Claim 25 has been canceled.

Reconsideration and withdrawal of these rejections are thus respectfully requested.

VI. Claim Rejections Under 35 U.S.C. §103(a)

A. Shirasaki in view of Zavracky, Kimura and Yamamoto

Claims 5-7, 11-16, 19-22 and 26-27 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Shirasaki as applied to claims 1-2, 10 and 17 above, and further in view of U.S. Patent No. 0,158,823 (hereinafter "Zavracky"), Kimura, and U.S. Patent No. 5,610,628 (hereinafter "Yamamoto"). This rejection is respectfully traversed.

Shirasaki was cited as teaching that the liquid crystal display can be reflective because the reflective liquid crystal display used in the daylight with bright outside light can obtain good contrast display and suppress power consumption. Shirasaki was also cited as teaching that in a dark environment where there is insufficient amount of outside light, the organic EL device is activated to be in a luminescent state.

Zavracky was cited as teaching when a particular pixel of the display is turned on by the TFTs, the liquid crystal material rotates polarized light being transmitted through the material so that the light will pass through the second polarizing filter.

Kimura was cited as teaching that the picture element circuit can be a circuit having memory functions.

Yamamoto was cited as teaching a super twisted nematic liquid crystal display used for achieving the sharpness of the display, and in the super twisted nematic liquid crystal display, the liquid crystal molecules are twisted through an angle of 180 to 270 degrees.

However, even if one of ordinary skill in the art would have found Shirasaki to teach a reflective liquid crystal display and an organic EL device activated to be in a luminescent state; Zavracky to teach a particular pixel of the display turned on by the TFTs and the liquid crystal material rotates polarized light being transmitted through the material so that the light will pass through the second polarizing filter; Kimura to teach that the picture element circuit having memory functions; and/or Yamamoto to teach a super twisted nematic liquid crystal display, the presently claimed invention still would not have been achieved.

Specifically, nothing in Zavracky and/or Yamamoto remedies the deficiencies of Shirasaki and/or Kimura discussed above with respect to amended claims 1, 3 and 23. That is, nothing in the combined teachings of Zavracky, Shirasaki, Kimura and/or Yamamoto would have led one of ordinary skill in the art to an electro-optical device comprising a plurality of signal lines and a plurality of pixels, each pixel including an electroluminescence element and a liquid crystal element, wherein light emission of the electroluminescence element and light reflection through the liquid crystal element is controlled according to a signal supplied through the plurality of signal lines, as recited in claim 1.

Nor would the combined teachings of Zavracky, Shirasaki, Kimura and/or Yamamoto have led one of ordinary skill in the art to an electro-optical device comprising a layer including switching elements; a layer including an electroluminescence element and a layer including a liquid crystal element wherein the layer including the electroluminescence element is placed above the layer including the switching elements and the layer including the liquid crystal element is placed above the layer including the electroluminescence element, as recited in claim 3.

Nor would the combined teachings of Zavracky, Shirasaki, Kimura and/or Yamamoto have led one of ordinary skill in the art to a method for driving an electro-optical device, the electro-optical device including a plurality of pixels, each pixel comprising an electro-

luminescence element and a liquid crystal element, and the method comprising the step of selectively driving the electro-luminescence element and liquid crystal element for displaying images, as recited in claim 23.

Accordingly, Applicant respectfully submits that Zavracky, Shirasaki, Kimura and Yamamoto, whether taken singularly or in combination, would not have led one of ordinary skill in the art to the invention of claims 1, 3, 23 or any of depending claims 2, 5-22, 24 and 26-29. Reconsideration and withdrawal of this rejection are thus respectfully requested.

B. Shirasaki in view of Funai

Claim 18 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Shirasaki as applied to claims 1-2, 10 and 17 above, and further in view of U.S. Patent No. 6,126,667 (hereinafter "Funai"). This rejection is respectfully traversed.

Claim 18 depends from claim 17, which depends from claim 2, which depends from claim 1. Claim 18 adds that the TFTs are polycrystalline silicon TFTs produced by a low-temperature process of 600°C or less.

Funai was cited as teaching using a polycrystalline silicon film form of high performance TFTs having a high mobility and a high ON/OFF ratio that can be realized with a low-temperature process such as 550°C. However, even if one of ordinary skill in the art would have found Funai to teach polycrystalline silicon TFTs produced by a low-temperature process of 600°C or less, the presently claimed invention still would not have been achieved. Specifically, nothing in Funai remedies the deficiencies of Shirasaki discussed above with respect to amended claim 1.

Accordingly, Applicant respectfully submits that Shirasaki and Funai, whether taken singularly or in combination, would not have led one of ordinary skill in the art to the invention of claim 1, or any of depending claims 2 and 5-22. Reconsideration and withdrawal of this rejection are thus respectfully requested.

C. Kimura in view of Shirasaki

Claim 24 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kimura as applied to claims 23 and 25 above, and further in view of Shirasaki. This rejection is respectfully traversed.

Amended claim 24 depends from claim 23 and adds that the electroluminescence element and the liquid crystal element are selected to be driven according to a condition at which the electro-optical device is used.

Shirasaki was cited as teaching that the plurality of types of electro-optical elements include a luminescent element and a liquid crystal element. However, even if one of ordinary skill in the art would have found Shirasaki to teach electro-optical elements including a luminescent element and a liquid crystal element, the presently claimed invention still would not have been achieved. Specifically, nothing in Shirasaki remedies the deficiencies of Kimura discussed above with respect to amended claim 23.

Accordingly, Applicant respectfully submits that Kimura and Shirasaki, whether taken singularly or in combination, would not have led one of ordinary skill in the art to the invention of claim 23, or of depending claim 24. Reconsideration and withdrawal of this rejection are thus respectfully requested.

VII. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-3, 5-24 and 26-29 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachments:

Form PTO-1449
Drawing Replacement Sheets

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